

Rec'd PCT/PTO 6 SEP 2005

PCT/IB2003/001675

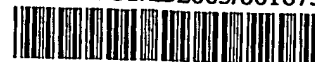
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Translation



Applicant's or agent's file reference B-14187 PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/IB2003/001675	International filing date (day/month/year) 24 avril 2003 (24.04.2003)	Priority date (day/month/year) 24 avril 2002 (24.04.2002)
International Patent Classification (IPC) or national classification and IPC H01J 37/32, H05H 1/24, 1/26		
Applicant APIT CORP. S.A.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 11 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 03 november 2003 (03.11.2003)	Date of completion of this report 24 August 20 (24.08.20)
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/IB2003/001675

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☒ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☒ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-27 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ 1-18 _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____, as originally filed/furnished
- pages* _____ 1/11-11/11 _____ received by this Authority on _____ 05.06.2003
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/IB 03/01675

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-18	YES
	Claims		NO
Inventive step (IS)	Claims	12-16	YES
	Claims	1-11, 17, 18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims		NO

2. Citations and explanations

Reference is made to the following documents:

D1: WO-A-99/46964;
D2: US-A-6 140 773;
D3: WO-A-00/27170;
D4: EP-A-0 636 427;
D5: JP-A-2002 001253;
D6: JP-A-2002 008895.

1. The features disclosed in claim 1 with respect to "the plasma generator" are not comprehensible because there are a plurality of plasma generators. The description does not appear to support an interpretation according to which each plasma generator includes a treatment-gas supply system and a current supply system.

Moreover, it seems that an LC adapter cannot be designed to supply a pulsed current.

2. D1 describes a device for plasma-treating recipients (see, in particular, the passages cited in the search report). Said device includes a treatment-

gas supply system (31a), a current supply system (12) designed to supply a pulsed current, and a kinematic (rotary) system. Said device operates at atmospheric pressure. A person skilled in the art is aware that current pulses can be generated using a transistor acting as a switch and that an LC adapter is usually necessary.

The device as per claim 1 differs from the known device in that it includes:

- a kinematic system for conveying the recipients,
- a plurality of generators, with each generator treating one recipient at a time, and
- a supply system including at least one transistor or an LC adapter.

It follows that the device as per claim 1 is novel (PCT Article 33(2)).

3. The problem that the present invention is intended to solve can be considered to be that of including devices for plasma surface-treating recipients in an industrial line (see page 3, lines 1 to 8 of the description).

An industrial line for treating recipients, in which one treatment unit treats one recipient at a time is already known (see D4). Devices containing a plurality of plasma generators are already known (see D2 and D3).

A person skilled in the art, faced with the stated problem, would include the device for plasma

surface-treating recipients, as known from D1, in an industrial line without having to exercise any inventive skill and would, for this purpose, provide a plurality of plasma generators for treating one recipient at a time. What is more, claim 1 does not contain any features aimed, in particular, at adapting the device so that one recipient is treated by one generator at a time.

For these reasons, the solution proposed in claim 1 of the present application is not considered to be inventive (PCT Article 33(3)).

2. Dependent claims 2-11, 17 and 18 do not contain any features which, in combination with the features of any one of the claims to which they refer, might define subject matter that fulfils the PCT requirement of inventive step for the following reasons:

In the domain of surface treatment, alternative plasma generators that operate at atmospheric pressure and are suitable for treating the surface of a recipient are also known (see D5 or D6). In such a column-shaped generator, a person skilled in the art would select a column diameter or width close to, or slightly greater than, the diameter or width of the recipient. Industrial-grade devices are usually controlled by a control unit. Such a unit should control current pulse amplitude, pulse leading edge rise time, pulse frequency, pulse interval and gas distribution.

In the device known from D2, there are carousels on which treatment units are arranged side by side in

the kinematic system. A person skilled in the art would also arrange the plasma generators in this way.

The device of D2 also includes a recipient holding area for the batch treatment of recipients, and air conveyor channels for moving the recipients using air.

It is obvious to a person skilled in the art that a current source and a gas supply system with a distributor valve are required.

The use of microcontrollers is also routine.

In industrial lines for recipients, the use of pivoting guide members to direct the loading of recipients is standard, as is the use of recipient holding rows and complementary areas.

4. The solutions to the problem, as proposed in claims 12, 13 and 16 of the present application are considered to involve an inventive step (PCT Article 33(3)) because the features therein are not suggested by the documents cited in the search report. Even though claims 12, 14 and 15 are not clear (PCT Article 6) because the expression "of the filament array type" is not comprehensible, they also appear to be inventive.